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13. ABSTRACT *(Maximum 200 words)*

This report is to certify that we have acquired a Spectra Physics femtosecond Ti:Sapp laser source comprised of a pump source Millennia XsP that delivers 10W of optical power, and a Tsunami femtosecond laser (Model: 3960X1BB. S/N: 2019) with broadband optics (700 nm-1000 nm) and a birefringent filter to pump an OPAL for the amount if $154.000. The laser was installed at the end of August of 2000 and has been running properly since then. This acquisition was complemented with that of an anti-vibration optical table, a high voltage power supply, a spectrometer, a computer for data acquisition, a source meter, and various optical and optomechanical components with matching funds provided by the University of Arizona.

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A femtosecond laser source for the study and development of organic photonic materials

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This report is to certify that we have acquired a Spectra Physics femtosecond Ti:Sapp laser source comprised of a pump source Millennia XsP that delivers 10W of optical power, and a Tsunami femtosecond laser (Model: 3960X1BB, S/N: 2019)with broadband optics (700 nm-1000 nm) and a birefringent filter to pump an OPAL for the amount if $154,000. The laser was installed at the end of August of 2000 and has been running properly since then. This acquisition was complemented with that of an anti-vibration optical table, a high voltage power supply, a spectrometer, a computer for data acquisition, a source meter, and various optical and optomechanical components with matching funds provided by The University of Arizona.

The laser system is used to establish the foundations for an understanding of charge injection, charge transport, charge trapping, and light-emission in organic molecules and polymers and their applications in storage, displays, and imaging. We are currently developing photorefractive polymers with non-destructive read-out. In these materials, photoconduction is initiated by exciting the organic composites via two-photon states. Photon-gated photorefractive polymers with non-destructive read-out properties are used for image filtering using holographic time gating techniques. The laser system will also be used to investigate the optical gain properties in light-emitting organic molecule and polymers in order to advance the development of organic lasers. The study and characterization of the electronic levels participating in the light-emission process will be conducted through femtosecond pump-probe experiments combined with ultrafast photoconductivity experiments.